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## NOTICE OF ALLOWANCE AND FEE(S) DUE

25889 7590 04/14/2009

COLLARD & ROE, P.C.  
1077 NORTHERN BOULEVARD  
ROSLYN, NY 11576

EXAMINER

PETKOVSEK, DANIEL

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 04/14/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,125

04/07/2006

Andreas Neyer

NEYER ET AL-1 PCT

9253

TITLE OF INVENTION: METHOD FOR THE PRODUCTION OF ELECTROOPTICAL PRINTED CIRCUIT BOARDS COMPRISING POLYSILOXANE WAVE GUIDES AND USE THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	07/14/2009

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25889 7590 04/14/2009

**COLLARD & ROE, P.C.**  
1077 NORTHERN BOULEVARD  
ROSLYN, NY 11576

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,125 04/07/2006 Andreas Neyer NEYER ET AL-1 PCT 9253

TITLE OF INVENTION: METHOD FOR THE PRODUCTION OF ELECTROOPTICAL PRINTED CIRCUIT BOARDS COMPRISING POLYSILOXANE WAVE GUIDES AND USE THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$755 \$300 \$0 \$1055 07/14/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PETKOVSEK, DANIEL 2874 385-014000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/575,125	04/07/2006	Andreas Neyer	NEYER ET AL-1 PCT	9253
25889	7590	04/14/2009	EXAMINER	
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			PETKOVSEK, DANIEL	
			ART UNIT	PAPER NUMBER
			2874	
DATE MAILED: 04/14/2009				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 99 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 99 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/575,125	NEYER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	DANIEL PETKOVSEK	2874	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to AF amendment filed March 27, 2009.
2. ☒ The allowed claim(s) is/are 1-28.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date ____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date ____.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other ____.</li> </ol> |
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### **DETAILED ACTION**

This office action is in response to the after final amendment filed March 27, 2009. In accordance with the after final amendment, claims 29-33 have been canceled.

Claims 1-28 are pending. The following Examiner's Amendment to claims 1-3, 10-12, 14-18, and 23-26 corrects the minor informality omitting "at least one" optical layer in the claims, and any indefiniteness by the claim language.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee. The amendments to claims 1-3, 10-12, 14-18, and 23-26 correct minor informalities in order to eliminate indefiniteness with the claim language.

The application has been amended as follows (~~removed~~], added):

Claim 1 (Currently Amended): A method for the production of an electro-optical printed circuit board, having a number of layers with electrically conductive elements, and at least one optical layer with optically conductive elements, wherein the at least one optical layer has a polysiloxane material, and wherein structuring of the elements in a form of channel waveguides of the at least one optical layer takes place by means of casting into a casting mold that contains the waveguide structures as a negative mold, whereby a mechanical connection between the at least one optical layer and at least one layer of the electrically conductive printed circuit board layers is produced in direct connection with the production of the at least one optical layer.

Claim 2 (Currently Amended): The method according to claim 1, wherein the mechanical connection between the at least one optical layer and the at least one layer

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of the electrically conductive printed circuit board layers is produced directly during the production of the elements of the at least one optical layer.

Claim 3 (Currently Amended): The method according to claim 2, wherein the at least one optical layer is formed from a core polysiloxane having a higher index of refraction, as well as a first polysiloxane as a superstrate layer, having a low index of refraction, and a second polysiloxane as a substrate layer, having a low index of refraction, in the form of cover layers on the core polysiloxane.

Claim 10 (Currently Amended): The method according to claim 1, wherein the mechanical connection between the at least one optical layer and the at least one layer of the electrically conductive printed circuit board layers is produced subsequent to production of the at least one optical layer.

Claim 11 (Currently Amended): The method according to claim 10, wherein the at least one optical layer comprises at least one of a polysiloxane substrate, a polysiloxane core, and a polysiloxane superstrate and is first produced as an independent layer, and subsequently mechanically connected with one or more layers of the electrically conductive printed circuit board layers either on one or both sides of the electrically conductive printed circuit board layers.

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Claim 12 (Currently Amended): The method according to claim 11, wherein the at least one optical layer is mechanically connected with the one or more layers of the electrically conductive printed circuit board layers via lamination or gluing.

Claim 14 (Currently Amended): The method according to claim 1, wherein adhesion promoters are used to support the mechanical connection of the polysiloxane material of the at least one optical layer with the at least one layer of the electrically conductive printed circuit board layers.

Claim 15 (Currently Amended): The method according to claim 14, wherein a polymer layer that adheres [~~well~~] to the at least one layer of the electrically conductive printed circuit board layers is applied to the at least one optical layer as an adhesion promoter.

Claim 16 (Currently Amended): The method according to claim 1, wherein a physical and/or chemical treatment of a surface of the at least one layer of the electrically conductive printed circuit board layers, said at least one layer being connected with the at least one optical layer, is performed in order to achieve activation of the surface for improved adhesion to the at least one optical layer.

Claim 17 (Currently Amended): The method according to claim 16, further comprising influencing adhesion properties of the at least one layer of the electrically conductive



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printed circuit board layers that is mechanically connected with the at least one optical layer with regard to the at least one optical layer via flaming with gases.

Claim 18 (Currently Amended): The method according to claim 16, further comprising influencing adhesion properties of the at least one layer of the electrically conductive printed circuit board layers that is mechanically connected with the at least one optical layer with regard to the at least one optical layer via plasma irradiation.

Claim 23 (Currently Amended): The method according to claim 7, further comprising producing coupling elements for optical coupling of the optically conductive elements to electrically conductive elements of the electrically conductive printed circuit board layers to be functionally connected at the same time when the at least one optical layer having the optically conductive elements is cast.

Claim 24 (Currently Amended): The method according to claim 23, wherein the pit structures for the optically conductive elements possess beveled flanks at ends of the pit structures; and wherein the at least one optical layer has molded segments that are metallized locally via said flanks after unmolding, and then function as integrated deflection mirrors.

Claim 25 (Currently Amended): The method according to claim 1, wherein the optically conductive elements of the at least one optical layer contain intersections, branches,

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mixers, wavelength multiplexers and wavelength de-multiplexers, and switching elements.

Claim 26 (Currently Amended): The method according to claim 1, wherein the optically conductive layer made of a polysiloxane material temperature stabilizes the at least one optical layer of the electro-optical printed circuit board without impairment of optical properties of the elements of the at least one optical layer.

***Allowable Subject Matter***

2. Claims 1-28 are allowed. The following is an examiner's statement of reasons for allowance: the closest prior art of record (Kaneko et al. U.S.P. No. 6,088,492; Kopetz et al. NPL; Ouchi US 2003/0179979 A1; and De Dobbelaere et al. U.S.P. No. 5,764,820) does not teach or reasonably suggest, *in combination*, the specific method for the production of an electro-optic printed circuit board (PCB) as claimed. In particular, there is no teaching or reasonable suggestion from the prior art of record to create the PCB with electrically conductive elements in which *polysiloxane* material is used for the optical layer as a *channel* waveguide(s), while further a *casting mold* is used as a *negative mold*, in which a mechanical connection between the optical waveguide layer and the at least one layer of electrically conductive PCB layers is produced in *direct* connection with the production of the optical waveguide layer (sole independent method claim 1, claims 2-28 dependent therefrom).

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Inventorship***

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL PETKOVSEK whose telephone number is (571) 272-4174. The examiner can normally be reached on M-F 8:30-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel Petkovsek/  
Patent Examiner, Art Unit 2874  
April 12, 2009